

## **APPENDIX A**

### **GENERAL SAFETY PRECAUTIONS**

Good housekeeping in hangars, shops, and on the flight line is essential to safety and efficient maintenance. The highest standards of orderly work arrangements and cleanliness should be observed while maintaining an aircraft. When the maintenance inspection task is complete, remove and properly store maintenance stands, hoses, electrical cords, hoists, crates, boxes and anything else used to perform the work.

Pedestrian lanes or fire lanes should be marked and utilized as a safety measure to prevent accidents and keep pedestrian traffic out of work areas.

Power cords and air hoses should be straightened, coiled, and properly stored when not in use.

To prevent aircraft damage or personal injury, the use of wheel or wing jacks on uneven or soft ground, or under windy conditions, should be avoided. Jack or raise the aircraft only in a closed hangar having a firm level floor.

Application of aircraft finishes (dope or lacquer) should be accomplished in a controlled environment (paint room) whenever possible. Never do this type work in the presence of lights that are not explosion proof or an open flame. Do not permit other work on an aircraft when it is being painted. Keep fire lanes clear and fire extinguishers available. Locate aircraft not being painted so as to permit quick removal from the shop or hangar.

Oil, grease, or any slippery substances spilled on hangar or shop floors should be immediately removed. If spills cannot be removed, they should be covered with an absorbent material to prevent fire or personal injury. Drip pans should be placed beneath engines and engine parts whenever dripping exists.

To prevent possible personal injury, appropriate safety devices should be used in mounting or removing aircraft tires. When inflating tires on the wheels, tire gauges should always be used. Extreme caution and the use of pressure regulators is required to avoid overinflation of high-pressure tires. Never use high pressure air bottles to inflate tires.

Welding on aircraft in the hangar should never be permitted except in carefully controlled areas. When welding is required, get a professional to perform the work in conformance with the manufacturer's approved procedure.

#### **Servicing Aircraft Oxygen Systems**

Oxygen is a chemically stable, nonflammable gas, however, combustible materials ignite more rapidly, and burn with greater intensity in an oxygen-rich atmosphere. When oxygen combines with oil, grease, or any other petroleum product, it forms a highly explosive mixture. Petroleum products are extremely sensitive to impact and spontaneous combustion when exposed to oxygen.

Before servicing any aircraft, consult the specific aircraft maintenance manual to determine the proper type of servicing equipment to be used. Aircraft should not be serviced with oxygen during fueling or other maintenance work. Oxygen servicing of aircraft should be done outside of hangars and by qualified personnel.

#### **Aircraft Tiedown**

Aircraft not in use and parked outside should be tied down at all times. Prevailing wind and weather conditions will influence the amount of security needed in tying down air-

craft. Under normal conditions minimum security is sufficient, but whenever winds or storms are forecast, additional tiedowns should be added.

Aircraft should be headed, as nearly as possible, into the prevailing wind, depending on the locations of the parking area's fixed tie-down points. After the aircraft is properly located, center the nose wheel or the tailwheel in the fore-and-aft position. Aircraft which are not equipped with tiedown fittings should be secured in accordance with the manufacturer's instructions.

#### **Tiedown Anchors**

All parking should provide at least three-point tiedown (three anchors). Heavy aircraft

may require five or more. Anchors installed in paved parking areas are adaptable to any size aircraft. When parking aircraft, spacing should provide for wing tip clearance.

#### **Control Locks**

Control locks (blocks) or gust locks should be installed anytime an aircraft is not in use.

#### **General Precaution**

The security and prevention of damage to aircraft not in use depends upon the owner, pilot, or aircraft operator taking necessary precautions. The availability of weather condition reports should provide ample time to take additional safety precautions regarding severe weather.

## APPENDIX B

### AVIATION FUEL—IDENTIFICATION AND FUELING PROCEDURES

#### Gasoline

The tetraethyl lead content of aviation fuel determines the grade rating.

<i>Grade/Octane Rating</i>	<i>Color</i>	<i>Maximum Tetraethyl Lead Per Gallon</i>
80	Red	0.5 ml. gal.
100LL (Low Lead)	Blue	2.0 ml. gal.
100HL (Hi Lead)	Green	3.0 ml. gal.

The higher grade ratings are for use in high compression engines.

Always use the grade of fuel recommended by engine manufacturer (regular or alternate). The availability of different fuel grades at servicing facilities is largely dependent on the classes of aircraft using the facility. Most fuel service units plainly indicate the type and grade of fuel. Another check for proper grade fuel is to compare the fuel color with the colored band on the service hose. A band 12" in width indicating fuel grade must be painted on the fuel hose adjacent to the fitting used to dispense the fuel. Fuel grade is painted within this color band.

#### Jet Fuel

There are three types of jet fuel in common use today:

1. Kerosene grade turbine fuel, now designated as Jet A;
2. A blend of gasoline and kerosene designated as Jet B;
3. A third type, called Jet A-1, for operation at extremely low temperatures.

Most commercial turbine engines will operate on either Jet A or Jet B fuel. However, the difference in the specific gravity of the fuels may require fuel control adjustments;

check the FAA-Approved Airplane or Rotorcraft Flight Manual or engine information for instructions.

#### Fueling Aircraft

Do not fuel or defuel an aircraft in a hangar or other enclosed space. The aircraft should be free from fire hazards, and have the engine switches off. Chocks should be placed under the wheels prior to fueling or defueling. Fire extinguishing equipment should be available on the fuel service vehicle or at the fuel hydrant.

Pressure fueling is used on many late-model aircraft. This is sometimes referred to as "single-point" or "underwing" fueling. It greatly reduces the time required to service large aircraft. Pressure fueling also reduces the chance of static electricity igniting fuel vapors. The design of pressure fueling systems varies with each type of aircraft. Consult the manufacturer's instructions for detailed procedures on how each system functions.

All fuel is filtered through water-separating equipment installed in the system between the supply tank and the service truck. In the case of island-type refueling stations, it is filtered as it leaves the supply pumps. These filters and separators are usually checked each day for evidence of dirt and water. This is also done each time a mobile refueler is reloaded.

Fuel which has been stored in cans or barrels should be run through a strainer-funnel before being put into an aircraft. This practice is necessary because condensation and rust develop inside cans and barrels. An increase in the hazard of static electricity results when the gasoline passes through filters. The filter

should be grounded and remain grounded until all gasoline has drained through it. Never use a plastic funnel, bucket, or similar nonconductive container when servicing from storage cans or barrels.

When fueling aircraft by truck, the aircraft should be located on the apron or a dispersal site. The tank truck should be as far from the aircraft as the hose will permit, preferably to the windward or upwind side. Identify the aviation fuel and lubricating oil dispensed from each fueling unit before beginning the actual servicing. The fueling technicians should be familiar with the various grades of gasoline so that only the appropriate fuel will be used.

There should be no lights other than approved explosion-proof lights permitted within 100 feet of the fueling operation. Exposed electric switches, sliprings or commutators, dynamos or motors, and spark-producing electrical equipment, should not be operated within 100 feet of fueling operations.

All nonessential circuit switches should be "OFF." Assure that both the aircraft and the

truck are properly grounded to prevent static electricity sparks. To accomplish this, a separate ground wire should be connected from aircraft to ground, from fuel truck to ground, and the hose nozzle grounded to the aircraft.

If aircraft fuel or other combustible liquid is spilled, it should be immediately removed by washing with water. It may also be covered with a foam blanket or neutralized by other means. Tools of nonsparking metal should be used when working on any part of a system or unit which is designed for storing or handling gasolines. Notify the proper fire authorities if the situation so dictates.

### Oil

Aircraft oil tanks are normally checked at the same time the fuel tanks are filled. There are a few exceptions to this general rule. Some manufacturers recommend that the oil level in certain jet engines be checked within a specified time after engine shutdown. In all cases, the manufacturer's instructions should be followed not only for servicing procedures but also for type and grade of oil used.

## **APPENDIX C**

### **CERTIFICATE OF REGISTRATION—AIRCRAFT ELIGIBILITY AND APPLICATION**

The purchaser of an aircraft must apply for a Certificate of Aircraft Registration before he flies it. The Aircraft Registration Application, AC Form 8050-1, consists of an original, two duplicate copies, and instructions for its preparation and submission.

An application for a registration certificate must be accompanied by an aircraft bill of sale or other evidence of ownership. A bill of sale which meets the recording requirements of the Federal Aviation Administration is AC Form 8050-2, Aircraft Bill of Sale.

The temporary copy of the application must be placed in the aircraft until the permanent certificate of registration is received from the Federal Aviation Administration.

Make sure the certificate of aircraft registration has not expired. If one of the following exists, it is no longer valid:

1. The aircraft is registered under the laws of a foreign country;
2. The registration of the aircraft is canceled at the written request of the owner;
3. The aircraft is totally destroyed or scrapped; (If the aircraft is destroyed, the owner should notify the FAA by filing in the back of his Certificate of Aircraft Registration, AC Form 8050-3, and mailing it to the FAA Aircraft Registry, P.O. Box 25082, Oklahoma City, Oklahoma 73125.)
4. The ownership of the aircraft is transferred;
5. The holder of the certificate loses his United States citizenship; and
6. Thirty days have elapsed since the death of the holder of the certificate.

## **APPENDIX D**

### **CERTIFICATE OF AIRWORTHINESS—GENERAL INFORMATION**

An Airworthiness Certificate is issued by a representative of the Federal Aviation Administration after the inspection has been completed, and the aircraft is found to meet the requirements of the Federal Aviation Regulations (FARs), and is in a condition for safe operation. The certificate must be displayed in the aircraft so that it is legible to passengers or crew whenever the aircraft is operated. The Airworthiness Certificate is transferred with the aircraft when it is sold.

The Standard Airworthiness Certificate, FAA Form 8100-2, is issued for aircraft type certificated in the: (1) normal; (2) utility; (3) acrobatic; (4) glider; (5) manned free balloon; and (6) transport categories.

The Special Airworthiness Certificate, FAA Form 8130-7, is issued for all aircraft certificated in other than the standard classifications,

such as experimental, restricted, limited, and provisional. If an aircraft is classed as other than standard, contact your local FAA General Aviation District Office for an explanation of the pertinent airworthiness requirements and the limitations of such a certificate.

In summary, the FAA initially determines that an aircraft is in safe operating condition, conforms to a type design, and then issues an airworthiness certificate. A Standard Airworthiness Certificate remains in effect so long as the aircraft receives the required maintenance and is properly registered in the United States. Flight safety depends, in part, on the condition of the aircraft, which may be determined on inspection by certificated mechanics, approved repair stations, or manufacturers who meet specific requirements of FAR Part 43.